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Patent claims

5 1. A method for automatic address allocation by
control appliances (3-6) connected to a bus system (1)
in a means of transport, where
- the control appliances (3-6) interchange data
using transmission/reception units (10) via a common
10 data bus line (2),
- the control appliances (3-6) simultaneously access
the data sent using the common data bus line (2),
characterized
- in that a period of address allocation is started
15 by means of a message on the common data bus line (2),
- in that the message is taken as a basis, in the
period of address allocation, for electrically breaking
the common data bus line (2) into individual
subsections by virtue of the control appliances (4-6)
20 which are to be addressed using a respective isolating
means (9) for the purpose of electrically breaking the
common data bus line (2), and
- the control appliances (4-6) which are to be
addressed place their respective transmission unit (10)
25 at a transmission potential.

2. The method as claimed in claim 1,
characterized

in that in a period of address allocation

30 - at least one control appliance (4; 5; 6) which is
to be addressed measures an electrical parameter after
a time T_{SG} which is individually stipulated for the
control appliance (4; 5; 6) in question in order to
check whether there is a downstream control appliance
35 (4-6) which is to be addressed, and
- allocates itself the address if there is no
downstream control appliance (4-6) which is to be
addressed.

3. The method as claimed in either of claims 1 and 2, characterized in that the electrical parameter determined is a differential voltage level (U_{MEAS}) at the output to the downstream control appliance (4-6), as is obtained for determining message transmission in line with the bus system (1) on the data bus line (2).
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- 10 4. The method as claimed in claims 1 to 3, characterized in that the electrical parameter measured is the current (I_{MEAS}) on the data line (2) at the output to the downstream control appliance, when the data bus line (2) is in the form of a single-wire data line.
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5. The method as claimed in claims 1 to 4, characterized in that if there is a downstream control appliance (4-6) which is to be addressed then the data bus line (2) is closed, using the isolating means (9), in the control appliance (4; 5; 6) in question which is to be addressed, and the transmission unit in the transmission/reception unit (10) in the control appliance (4; 5; 6) in question which is to be addressed is turned off.
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6. The method as claimed in claims 1 to 5, characterized in that the isolating means (9) is in the form of a switching transistor or a relay or a repeater.
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7. The method as claimed in claim 6, characterized in that control appliances (3-6) which are not involved in the address allocation do not send any signals to the data bus line (2) in the period of address allocation.
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8. The method as claimed in claims 1 to 7,
characterized
in that

- 5 - after a time T_{MAX} the isolating means (9) in the
control appliances (4-6) which are to be addressed are
closed and the latter's transmission units are turned
off, and
- the time T_{MAX} is chosen to be greater than any of
10 the times T_{SG} which are individually stipulated for the
control appliances (4-6) which are to be addressed.

9. The method as claimed in claims 1 to 8,
characterized

- 15 in that during address allocation the address of the
control appliance (4-6) which is to be addressed is
obtained by
- transferring an address transmitted by a control
appliance (3) at the start of the period of address
20 allocation or
- incrementing an address sent by a control
appliance (3) at the start of an addressing cycle.

10. The method as claimed in claims 1 to 9,
25 characterized

in that the period of address allocation is produced as
part of an addressing cycle and is started repeatedly
by means of automatic flow control.

30 11. The method as claimed in claim 10,
characterized

in that after a particular time T_{Cyc} the period of
address allocation is restarted, with T_{Cyc} needing to be
chosen to be greater than T_{MAX} .

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12. A bus system for control appliances (3-6) in a
means of transport, where

- the control appliances (3-6) are connected by

means of a common data bus line (2),
- the control appliances (3-6) have
transmission/reception units (10) which the control
appliances (3-6) use for simultaneously accessing the
5 data sent via the common data bus line (2),
- where at least one control appliance (4; 5; 6) has
isolating means (9) for switchably interrupting the
data bus line (2), and
- the at least one control appliance (4; 5; 6) has a
10 measuring arrangement which measures an electrical
current or voltage signal (I_{MEAS} , U_{MEAS}) on the data bus
line (2) at the output to the downstream control
appliance (4; 5; 6),
characterized
15 in that the measuring arrangement has means for
controlling the isolating means (9) and the
transmission/reception unit (10) in the control
appliance (4; 5; 6) in question, which means take the
evaluation of the measured signals as a basis for
20 controlling the isolating means (9) and the
transmission/reception unit (10).

13. The bus system as claimed in claim 12,
characterized
25 in that the measuring arrangement has a comparison
means (13) to which the voltage level is supplied as an
input signal (15) on the data bus line (2) at the
output of the control appliance in question, the output
signal (16) from the comparison means (13) forming the
30 input signal for controlling the isolating means (9)
and the transmission/reception unit (10).

14. The bus system as claimed in claim 12 or 13,
characterized
35 in that the isolating means (9) is in the form of a
switching transistor or a relay or a repeater.